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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,512	11/05/2003	Pushpito Kumar Ghosh	3095-009	5938

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Alexandria, VA 22314

EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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06/25/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/700,512

Applicant(s)

GHOSH ET AL.

Examiner

Krishnan S. Menon

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43-54 and 56-77 is/are pending in the application.
- 4a) Of the above claim(s) 56-71 and 73 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 43-54, 72 and 74-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB08)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 43-54 and 56-77 are pending as amended in the RCE of 6/9/09, of which 56-71 and 73 are withdrawn from consideration as non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 43:

(1) The six solenoid valves and the back-pressure regulator are not properly linked to the system.

(2) The parts listed in the claim are not structurally linked to the system.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The structural relationship between the six solenoid valves and the rest of the system are critical or essential to the practice of the invention because the amended claims and applicant's arguments stress the

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importance of the six solenoid valves for patentability over the cited prior arts, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure as originally filed does not have any details of how the solenoid valves are structurally linked to the system, and therefore, would take undue experimentation on the part of a skilled artisan to figure out how the six valves are interlinked.

Arguments presented, traversing this rejection, are not persuasive because applicant's invention appears to be in the structural relation ship between the six solenoid valves, and the valves are not properly linked in the cited paragraphs. The recirculation in the membrane is also not enabling.

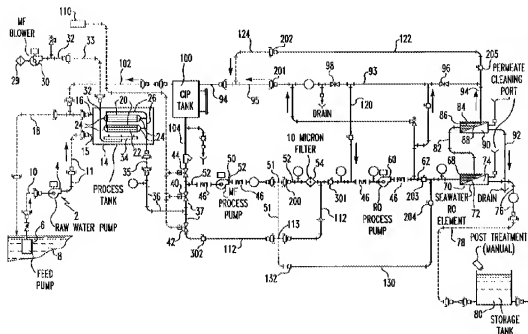
Claim Rejections - 35 USC § 102/103

1. Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 103(a) as unpatentable over Daly et al (US 6,120,688).

Daly teaches a reverse osmosis system with prefilter (20), reverse osmosis membranes (70,84), process tank, pumps, several solenoid valves, recirculation of the retentate water (through lines 93-93-120), back pressure regulator (see drain line or the recirculation line to the CIP tank: reverse osmosis systems require a back-pressure regulator to maintain the high pressure over the membrane for the separation to happen, and it is implied in the system if not explicitly stated). See the figure reproduced below.

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The limitations of "for concentrating aqueous solutions", or any reference to the herbal concentrate are only intended use, and are not patentable limitations in an apparatus claim.



U.S. Patent

Sep. 19, 2000

6,120,688

Claims 74-77: being portable, arranged within a housing, special arrangement of the valves air-bleed (or vent) valves, etc are well known, and within the capability of one of ordinary skill in the art to design. These limitations are not patentable.

The membrane module recited in the claims may not be identical to the membrane module used in the Daly reference, but the membrane is the same or similar – thin film composite- as claimed. Moreover, the thin film composite membrane has

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been commercially available from Film-Tec for many years now, and is not a patentable invention. The described membrane modules are also commercially available.

Arguments presented traversing this rejection are not persuasive: the claims are for an apparatus, and the apparatus is capable of performing the intended use. Concentration of the extracts is an intended use, which is not a patentable limitation. Arguments about speedy recovery and degradation of bioactive molecules, etc are not commensurate in scope with the claims. Provision of solenoid valves to control flow is well known in the art, and is not patentable. The reference teaches several solenoid valves for such flow controls.

2. Claims 43-54, 72 and 74-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-201872 or Lawhon et al (US 4,643,902) with evidence from Gobel et al (US 4,491,600) and/or Dorai et al (US 5,434,315)

Claims 43-55 and 72 recite a reverse osmosis system with a thin film composite membrane module, a prefilter, associated pumps and piping, valves, control valves and instrumentation to run the system; with the recycle of the concentrate from the membrane to the extract solution container. The system is intended for use in concentrating herbal extracts.

JP teaches a system for concentrating herbal extracts using reverse osmosis membranes, with prefilter and associated pumps, valves, etc. JP teaches using reverse osmosis for concentrating the extract especially for extracts which have volatile

components. Types of membranes including TFC are also taught. See pages 5 and 6 of the reference (of the English machine-translation). It is unclear if the reference specifically teaches recirculating the extract through the reverse osmosis system. However, the reference clearly states at several places that the reverse osmosis concentration is well known.

Lawhon teaches using ultrafiltration and reverse osmosis membranes for concentrating various fruit and vegetable extracts as claimed in figures 1-3. The pre-filtration step to remove suspended matter is seen in column 4 lines 5-10. The ultrafiltration step provides UF concentrate, and permeate; the permeate containing flavor and aroma components, which is concentrated by reverse osmosis, and the reverse osmosis permeate being just solvent (or water) being discarded. Additional equipment such as tanks, solenoid valves, power supply, control panels, regulators, rubber O-ring seals, etc., are inherent in the teaching of the reference. The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The membranes taught are hollow fiber and tubular (for RO: examples). Spiral wound membranes are also tubular. Moreover, the specific membrane structure such as spiral,

hollow fiber, or plate type are considered equivalents, as evidenced by the Gobel reference, column 3 lines 55-60 and column 4 lines 5-21.

Lawhon also does not specifically teach recirculating the concentrate for further concentration. Gobel teaches that recirculation can be done if desired (column 4 lines 60-68, and column 5, lines 32-49). Dorai teaches making multiple passes of the polymer liquids through a separation membrane (20), that is recirculating, to concentrate. Daly also teaches retentate recirculation (see rejection paragraph 1 above). Thus recirculating solutions through the membrane system is also well known. It would also be obvious to one of ordinary skill in the art at the time of invention to recirculate a stream if one pass is insufficient to obtain the desired concentration; and also for a batch operation.

The systems taught by the references are particularly effective in concentrating herbal extracts, functioning at room temperature, without frothing, enabling removal suspended mater, valves changing to help, enables adequate pressure, on-off switch helps, control functions, etc., are functional language and are not patentable limitations. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly,

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263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). Ability to scale up is not patentable. Dimensional details of the membrane etc., are not patentable limitations: In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.). The membrane used by the applicant are also known in the prior art, as admitted by the applicant in the specification, and therefore has no patentable weight.

Claims 74-77: being portable, arranged within a housing, special arrangement of the valves air-bleed (or vent) valves, etc are well known, and within the capability of one of ordinary skill in the art to design. These limitations are not patentable.

Arguments presented traversing this rejection are not persuasive: arguments are directed at the intended use and operation steps, but the claims are for the apparatus,

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and the apparatus taught by the combination of these references are capable of performing the function recited.

Response to Arguments

Applicant's arguments filed 9/19/08 have been fully considered but they are not persuasive.

They are addressed in the rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/Krishnan S Menon/

Primary Examiner, Art Unit 1797